

William Zhang

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TECHNICAL EXPERIENCE

ZeroshotData

Nov. 2024 – Present

Founding Engineer

San Francisco, CA

- **Led system-level operations and validation** for a large-scale data collection program, planning and executing a **3-month deployment** that integrated custom hardware, firmware, and field processes; **managed 30+ operators**, built reliability and QC workflows, and delivered **40,000+ minutes** of production-grade data.
- **Owned end-to-end electrical system design** and bring-up for production hardware, schematic design, PCB layout, simulation, procurement, assembly, testing, and field support across **5 custom PCB designs with 25+ revisions** deployed in thousands of devices; partnered closely with mechanical engineering on power, thermal, and packaging constraints, performed failure analysis and iteration, and **mentored an intern** through hands-on hardware validation and debugging.
- Developed and validated a **multi-sensor 6-DoF pose estimation system**, integrating **optical, visual-inertial SLAM, and electromagnetic sensing** into a unified pipeline; built calibration, post-processing, and validation tooling that achieved **<10 mm** spatial accuracy, supporting system-level performance characterization and real-world deployment robustness.

Simon Fraser University

Apr. 2023 – Aug. 2023

FPGA Machine Learning Research Assistant

Burnaby, BC

- Designed and optimized **FPGA neural network accelerators**, managing the full development lifecycle from architecture to implementation and evaluation, achieving **5× improvements in power efficiency** with minimal performance degradation.
- Implemented register renaming for the **open-source TAIGA RISC-V** core, **reducing LUT utilization per register by 50%** while maintaining throughput, improving area efficiency and scalability for embedded compute systems.

Epic Semiconductors

Sep. 2021 – Apr. 2022

Silicon Design and Application Engineer

Vancouver, BC

- **Led cross-functional hardware, firmware, and applications efforts** to deliver an automotive demonstration, coordinating integration and validation; the successful deployment directly contributed to **new customer acquisitions**.
- Developed low-level embedded firmware and digital hardware across multiple products, including **battery-free, self-powered bidirectional sensor modules** (Assembly/C, <3 ms response time) and the digital partition of a **mixed-signal ASIC** on TSMC 65 nm, achieving a 20% area reduction.

TECHNICAL PROJECTS

Smart Dragon Boat Paddle (Capstone Project)

- Designed electromechanical systems and **PCBs using Altium** to facilitate tracking of metrics such as stroke rate, power output, stroke length, and synchronicity.
- Developed a cloud-based machine learning pipeline to analyze and evaluate 3D motion data using GCP and Vertex Ai.
- Led the selection and sourcing of critical components for a custom PCB design, mitigating downtime during the COVID-19 component shortage by securing alternative suppliers and reducing costs by 15%.

A Box with Rounded Corners (TreeHacks [Stanford] Moonshot Winner)

- **Winner of Moonshot Prize**, (VMWare) Innovation, (Mage) Best Use of ML, and (Matrix) Best Application of Crypto.
- Idea: To turn waste heat generated from crypto mining into heating buildings.
- Developed a machine learning-powered backend system that optimized energy consumption, achieving a 40% reduction in annual energy costs.

EDUCATION

Simon Fraser University

Jun. 2024

Bachelor of Applied Science - Computer Engineering Concentration

Burnaby, BC

SKILLS & INTERESTS

- **Languages:** C++, Python, C, VHDL, Verilog, C#
- **Cloud & Infrastructure:** Docker, FreeRTOS, Firebase, MongoDB, Redis, MySQL
- **Tools & Platforms:** Xilinx, Altera, AWS, GCP, Altium, KiCad, ROS2
- **Frameworks:** React, TensorFlow, next.js, pytorch
- **Hardware:** FPGA (Zynq, Stratix), Microcontrollers (Arduino, STM32, PIC, ESP32, MSP430)